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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,725	03/29/2000	Seok-Keun Koh	0630-2009PUS1	9859

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EXAMINER	
MAYEKAR, KISHOR	
ART UNIT	PAPER NUMBER
1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/16/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	09/509,725	KOH ET AL.	
	Examiner	Art Unit	
	Kishor Mayekar	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23,25,26 and 28-36* is/are pending in the application.

4a) Of the above claim(s) *2-19,22 and 30-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 20, 21, 23, 25, 26, 28, 29 and 33-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1, 20, 21, 23, 25, 26, 28, 29 and 33-36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 20, 21, 25, 26, 28 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummin et al. (US 3,252,830) in light of Yokoyama et al. (US 5,080,971), and in view of Haque et al. (US 4,588,641), all the references cited in previous Office action. Cummin's invention is directed to a method for producing thin dielectric organic polymeric film to be employed in making a capacitor. Cummin discloses that the film is produced by all the steps as claimed (Fig. 1; col. 2, line 55 through col. 3, line 27; col. 3, line 67 through col. 4, line 14; and col. 4, lines 27-30 and lines 43-52). Cummin also discloses in col. 4, lines 35-42 that the film thickness is less than 0.5 micron and relatively thicker films have been found to be less desirable. As to the adhesion property of the film, it is inherently possessed by the film when the substrate is the anode. As to the plasma formation, Yokoyama discloses that positive and negative ions and radicals are generated

during the forming of a plasma (col. 4, lines 18-44). As to hydrophilicity or hydrophobicity, since the polymer is formed from a DC plasma from the same gases, it is inherent in the Cummin's film as it is obtained by the same process steps. The differences between Cummin and the above claims are the recited period of applying the voltage and the surface-processed step.

As to the first difference, because Cummin teaches the film thickness of less than 0.5 micron and in col. 4, lines 27-38 that it is also possible to control the rate of polymerization, i.e., by operating the glow discharge process with a partial pressure of the carrier gas along with the organic monomer, and the thickness, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Cummin's teachings as it has been settled that proper adjustment of a known effective variable of a known or obvious process is within the capabilities of one having ordinary skill in the art. *In re Aller* 105 USPQ 233; *In re Boesch* 205 USPQ 215.

The same is applied to claim 21 as it is obtained by the same process steps and claims 25, 26 and 28 for the optimization.

As to the second difference, Haque shows in a plasma treatment for improving adhesion of metallic and non-metallic substrates the steps of plasma polymerization the substrate with a hydrocarbon monomer and surface processing the plasma polymerized substrate (see abstract; col. 5, line 62 through col. 6, line 46). The subject matter as a

whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Cummin's teachings as shown by Haque because this would result in further treated the plasma polymerized gas.

As to the subject matter of claim 35, Cummin discloses it in Fig. 2, col. 4, line 68 through col. 5, line 7 and paragraph crossing cols. 5 and 6. As such, the selection of substrate from either a metallic sheet or metallized insulating sheet would have been within the skill of ordinary level in the art.

4. Claims 23 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummin '830 in light of Yokoyama '971 and in view of Haque '641 as applied to claims 1, 20, 21, 25, 26, 28 and 33-35 above, and further in view of Yanagihara et al. (US 4,693,799). The difference between the references as applied above and the instant claim is the DC discharge is performed periodically in the form of on/off pulsing during a total processing time. Yanagihara shows in a process for producing plasma polymerized film using a pulse discharging where the discharging is direct current discharge and wherein the gas is unsaturated aliphatic hydrocarbon monomer with an inert gas (see abstract; col. 2, line 52 through col. 3, line 15; col. 3, line 67 through col. 4, line 1; col. 4, lines 46-52; and col. 7, lines 15-24). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as suggested by Yanagihara because this would result in improving

properties of the organic polymeric films as compared to films obtained from a continuous plasma polymerization process.

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cummin '830 in light of Yokoyama '971 and in view of Haque '641 as applied to claims 1, 20, 21, 25, 26, 28 and 33-35 above, and further in view of Kleeberg et al. (US 5,089,290), another reference cited in the last Office action. The difference between the references as applied above and the instant claim is the step of annealing the formed polymer. Kleeberg shows the above limitation in a method of plasma polymerization of a substrate (see abstract). The subject matter as a whole would have been obvious to one having ordinary skilled in the art at the time the invention was made to have modified the references' teachings as suggested by Kleeberg because this would result in stabilizing the formed polymer.

Response to Arguments

6. Applicant's arguments filed 27 October 2006 have been fully considered but they are not persuasive because of the new ground of rejections asset forth in the above paragraphs.

In response to Applicant's argument that, as Cummin requires that the substrate sheet 6 includes an electrical insulating material layer as described at column 6, lines 43-59, Cummin fails to disclose depositing a polymer through plasma polymerization on the

surface of an anode in a manner such as described in claim 1 and claim 36, the examiner finds this is unpersuasive. Since Cummin discloses in col. 3, lines 60-63 that the substrate may be on or form part of either the anode or cathode, in col. 4, lines 43-59 that the substrate sheet 6 is a synthetic resin sheet having its surface metallized with a suitable electrode material, and in paragraph crossing cols. 5 and 6 the substrate of metal, Cummin's substrate is an anode of a metal.

In response to Applicant's argument that Cummin fails to disclose or suggest the 5-60 second time period, since the optimal time is depending upon the concentration of the acetylene, it is clear that upon plasma polymerizing the polymerization is no longer proceeded when concentration of acetylene is at minimum. Further, Cummin teaches the optimization.

In response to Applicant's argument to the combination of references, the rejection stands.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kishor Mayekar
Primary Examiner
Art Unit 1753